

PLASMA-TV

UTS-Nr.: 999 QUELLE
Best.Nr.: 0531137/01
Ger.Bez.: PLASMA-TV

GKz: G GERAET
WGT: 648 TISCHGERAETE
KD-Sektor: F FERNSEHGERAETE
BaumNr.: 00 KEIN DIAGNOSEBAUM VORHANDEN
Klassierung: FFT COLOR-TISCHGERAET
IFW-FehlerGru.: 202 FS-GER.,TV-SP.,SAT-ANLAGEN
Type/Privileg/Universum.Nr FT-PT 8192
Beschreibung 106 CM,16:9,FLAT-TV
VK-Preis: 14999.00

Serviceart: 01 PROPECTIS
Garantie fuer Kunden 12 Monate
Sondervereinbarungen: 0 SIEHE SERVICEART

Garantiereparatur 0004063 PROPECTIS GMBH
Sondervereinbarungen: 0 SIEHE SERVICEART

Katalog	Seite
Erst 995 SONDERKATALOGE H/W 99	0000
Letzt 000 NOCH IM AKTUELLEN KATALOG	0000

Geraete Info:
CHASSIS: 11 PW 42

NICHT AUFGEFUEHRTE ERSATZTEILE SIND IM KLARTEXT
ZU BEZIEHEN.

Technische Daten:

Fehler:

PLASMA TV (version 1.5)

GENERAL FEATURES

INFRARED REMOTE CONTROL	YES	TOP/FLOF	YES
ON-SCREEN FUNCTIONAL DISPLAYS	YES	INSET SATALITE RECEIVER	NO
POWER FACTOR CORRECTOR	NO	ON TIMER START UP	NO
FREQUENCY SYNTHESIS TUNING	YES	PROGRAM STORAGE LOCATIONS	100
VOLTAGE SYNTHESIS TUNING	NO	MEGATEXT	NO
NO IDENT TIMER	NO	TV TEXT	NO
SLEEP TIMER	NO	MENU SYSTEM	YES

RECEPTION SYSTEM

PAL B / G	YES	SECAM B / G	YES	PAL I	YES
SECAM L / L'	YES	SECAM D / K	YES	SECAM K'	YES
NTSC M	NO	NTSC Playback	YES	S-VHS	YES
NTSC B / G	NO	PAL M	NO	PAL N	NO
FRONT AV	NO	S - BAND (S1-S20)	YES	SATELLITE	NO
HYPER BAND RECEPTION (S21-S41)			YES	16:9 ASPECT RATIO	YES

PICTURE FEATURES

DIGITAL CTI	YES	LIVE PICTURE-IN-PICTURE	NO
DIGITAL NOISE REDUCTION	YES	COMB FILTER	YES
STILL PICTURE	YES	ZOOM PICTURE	YES
VGA/SVGA MODE	YES	100HZ DOUBLE SCAN	YES
PICTURE BOOSTER	NO	LINE COMPRESSOR FOR 4:3	YES

SOUND FEATURES

MONO ONLY	YES	PAL I NICAM STEREO	YES	SURROUND OUTPUTS	NO
ONLY NICAM STEREO	YES	SECAM-L NICAM STEREO	YES	BALANCE CONTROL	YES
ONLY GERMAN STEREO	YES	NICAM+GERMAN STEREO	YES	BUILT-IN SPEAKER	2
DETACHABLE SPEAKER	YES	DOLBY PRO · LOGIC	NO	HEADPHONE OUTPUT	NO
CENTER OUTPUT	NO	3-D PHONIC	NO	EQUALIZER (5 BAND)	YES

EXTERNAL INTERFACES

EURO AV PLUG 1 (FULL SCART)	YES	EURO AV (SCART) PLUG 2	YES
EURO AV (SCART) PLUG 3	NO	S-VHS SOCKETS	YES
VGA SOCKET FOR PC INPUT	YES	75 Ω AERIAL SOCKET	YES
SATELLITE INPUTS	NO	HEADPHONE TERMINAL (JACKS)	NO
FRONT AV	NO	LEFT-RIGHT SPEAKERS SOCKETS (DIN)	NO
CENTER AND 2 SURROUNDS SPEAKERS SOCKETS (DIN)			NO

A. GENERAL ELECTRICAL SPECIFICATION

- Chassis Code : 11AK42
- Picture Screen : 42" 16:9 Plasma Display
- Reception System : PAL B/G, PAL I,
SECAM B/G, SECAM D/K, SECAM L/L',
NTSC Playback
- Reception Channels : VHF (BAND I/III) UHF (BAND U)
S-BAND (S1-S20)
HYPER BAND (S21 - S40)
- Input Terminals : 75 Ohm aerial,
1 Full SCART,
S-VHS input,
VGA input (VGA\SVGA\CGA)
- Output Terminals : Stereo Left and Right Speakers Outputs
- Power Supply : 220-240VAC, 50 Hz
Low Stand-by power (less than 10 Watts),
Typically 350W
- Audio Output Power : Stereophonic via the antenna connector.
Audio output of 2x15 watts
- Features : OSD,
Menu System,
100 programs,
16-9 / 4-3 Aspect ratio,
Program swap,
Digital CTI,
Digital noise reduction,
Gamma Correction,
Multi language Tele-Text character set,
Comb Filter,
Automatic mute if no carrier detected,
IR remote
- Controlled Items in Menu : Reception,
Picture Contrast,
Hue (for standard NTSC),
Volume,
Balance,
Equalizer,
Sound Mode,
Menu Language,
Fine Tuning,
System Selection,
Source Select,
Decoder (used with scart),
Store,
16:9 or 4:3 Aspect Ratio, and ZOOM modes.

VESTEL

Remote Control Buttons

: Digits (0..9)
Stand-by
Mute
Volume Up
Volume Down
Program Up
Program Down
Program Swap
Menu Entrance
TV
Sound Mode
Current program info
Still picture
S-video/ Scart/ PC
Time
TEXT
FORMAT (4:3, 16:9, ZOOM)
Cursor Up
Cursor Down
Cursor Left
Cursor Right

- Tuning System : PLL Tuning System (Frequency Synthesis)
- Safety Standard : IEC 65000
- Operating Conditions : -5 to +45 degrees C, 20-90 % RH

B. ELECTRICAL CHARACTERISTICS

1. Power Consumption

- 1.1. Minimum condition : 280 W
- 1.2. Maximum condition : 600 W
- 1.3. Stand-By : < 10 W

2. Mains Voltage

- 2.1. Nominal : 230 V_{AC}, 50/60 Hz
- 2.2. Maximum : 240 V_{AC}, 50/60 Hz
- 2.3. Minimum : 220 V_{AC}, 50/60 Hz

3. Insulation Resistance

- 3.1. Between live and neutral conductors of mains lead : 4 MΩ or more
- 3.2. Between mains lead conductors and chassis metalwork : 4 MΩ or more

4. Dielectric Strength

- 4.1. Between live and neutral conductors of mains lead : 1 Min. (5 KV_{DC} is applied. Mains switched off)
- 4.2. Between mains lead conductors and chassis : 1 Min. (5 KV_{DC} is applied. Mains switched off)

5. Reception Characteristics

- 5.1. Onset of Synchronization : 25 dBμV
- 5.2. Gain Limited Sensitivity : 48 dBμV
- 5.3. Onset of Color : 30 dBμV
- 5.4. AGC Characteristics (Input level 40 to 90 dBμV) : 2.0 dBμV
- 5.5. Maximum Usable Signal Level : 95 dBμV
- 5.6. AFC Pull-in Range : - 750 KHz / + 1 MHz

6. Response to Undesired Signals

- 6.1. IF Interference : Band I = 70 dBμV
Band III = 75 dBμV
UHF = 75 dBμV
- 6.2. Image Interference : Band I = 77 dBμV
Band III = 77 dBμV
UHF = 71 dBμV
- 6.3. Adjacent Channel Interference : Band I = 76 dBμV
Band III = 76 dBμV
UHF = 80 dBμV

7. Display Characteristics

- 7.1. Display Pixels : 852 (H) X 480 (V) pixels (1 pixel=1 RGB cell)
- 7.2. Display cell : 2556 (H) X 480 (V) cells
- 7.3. Pixel Pitch : 1.08 (H) X 1.08(V) mm
- 7.4. Cell Pitch : 0.36 (H) X 1.08 (V) mm
- 7.5. Effective Display Size : 920.16 mm (H)X 518.40 mm (V) (42 inch diagonal)

VESTEL

- 7.6. Aspect Ratio : 16:9
- 7.7. Brightness Level : 200 cd/m² typical
- 7.8. Minimum Contrast Ratio : 58
- 7.9. Viewing angle : >160°

8. Video Signal Characteristics

- 8.1. Luminance Signal Bandwidth : 10 MHz max.
- 8.2. Sound Rejection in Video Channel : 36 dB min.
- 8.3. Chroma Rejection in Luma Channel : 20 dB
- 8.4. ACC Characteristics : 2 dB
- 8.5. Color Killer Level : -26 dB

10. Audio Characteristics

- 10.1. Maximum Output Power : 2x15 W_{RMS} nom. (Stereo Left and Right)
(For 1 KHz FM signal & - / + 15 KHz Frequency Deviation)
- 10.2. Signal to Noise Ratio : More than 40 dB
- 10.3. THD at Nominal Power : Less than 10%
- 10.4. Frequency Response : 100 - 15000 Hz
- 10.5. Loudspeaker Impedance : 8 Ohm (Left and Right and Center)

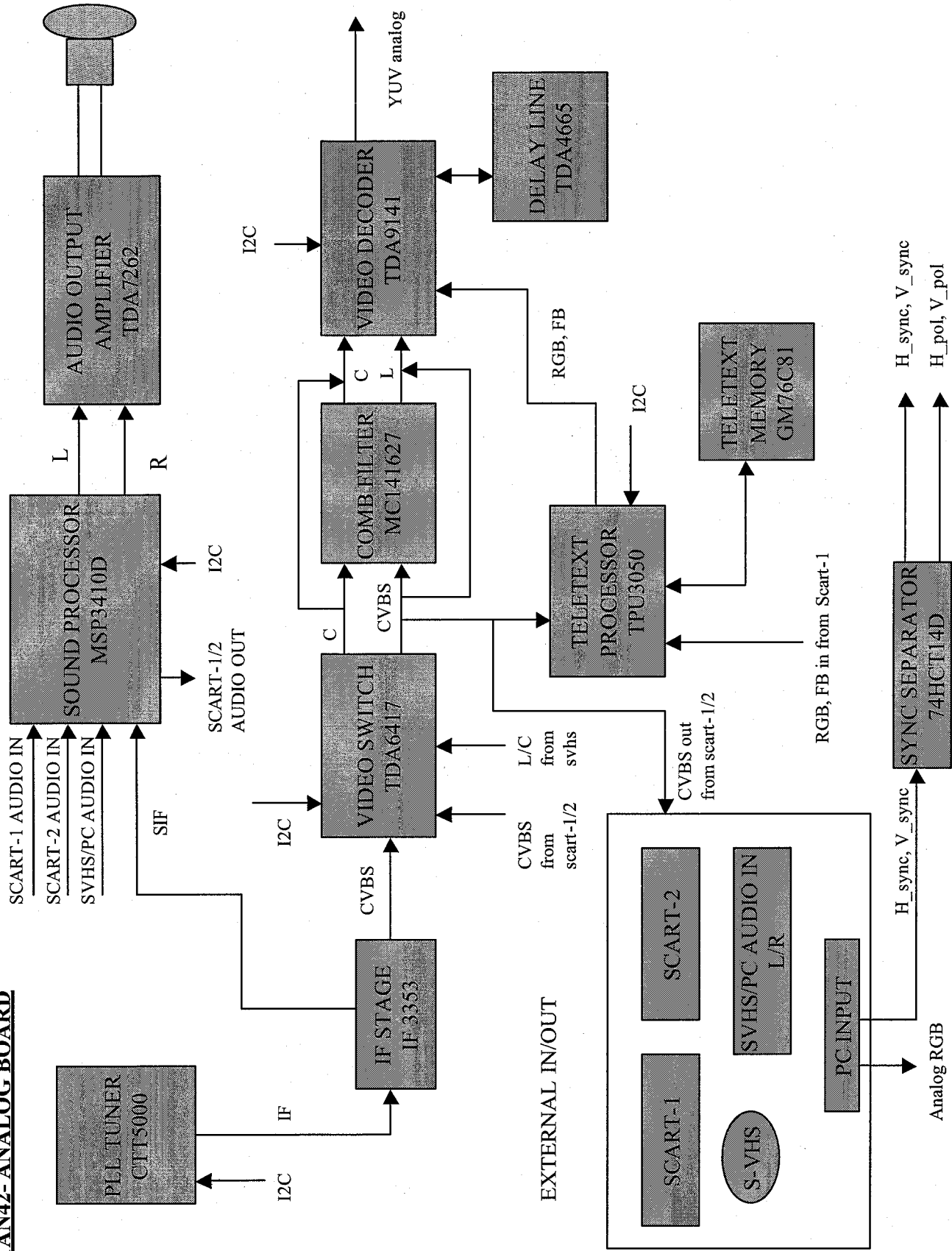
11. Others

- 11.1. Power Connection : Moulded 2-pin Europlug with ground
- 11.2. Length of mains lead : More than 2.0 meters
- 11.3. Remote Control Unit System : Infra-red wireless signal transmission
- 11.4. Remote Control Range : Directly in front of receiver = 10 m or more
+ / - 45 degrees offset = 6 m or more
- 11.5. Mechanical Vibration Noise : Not Audible

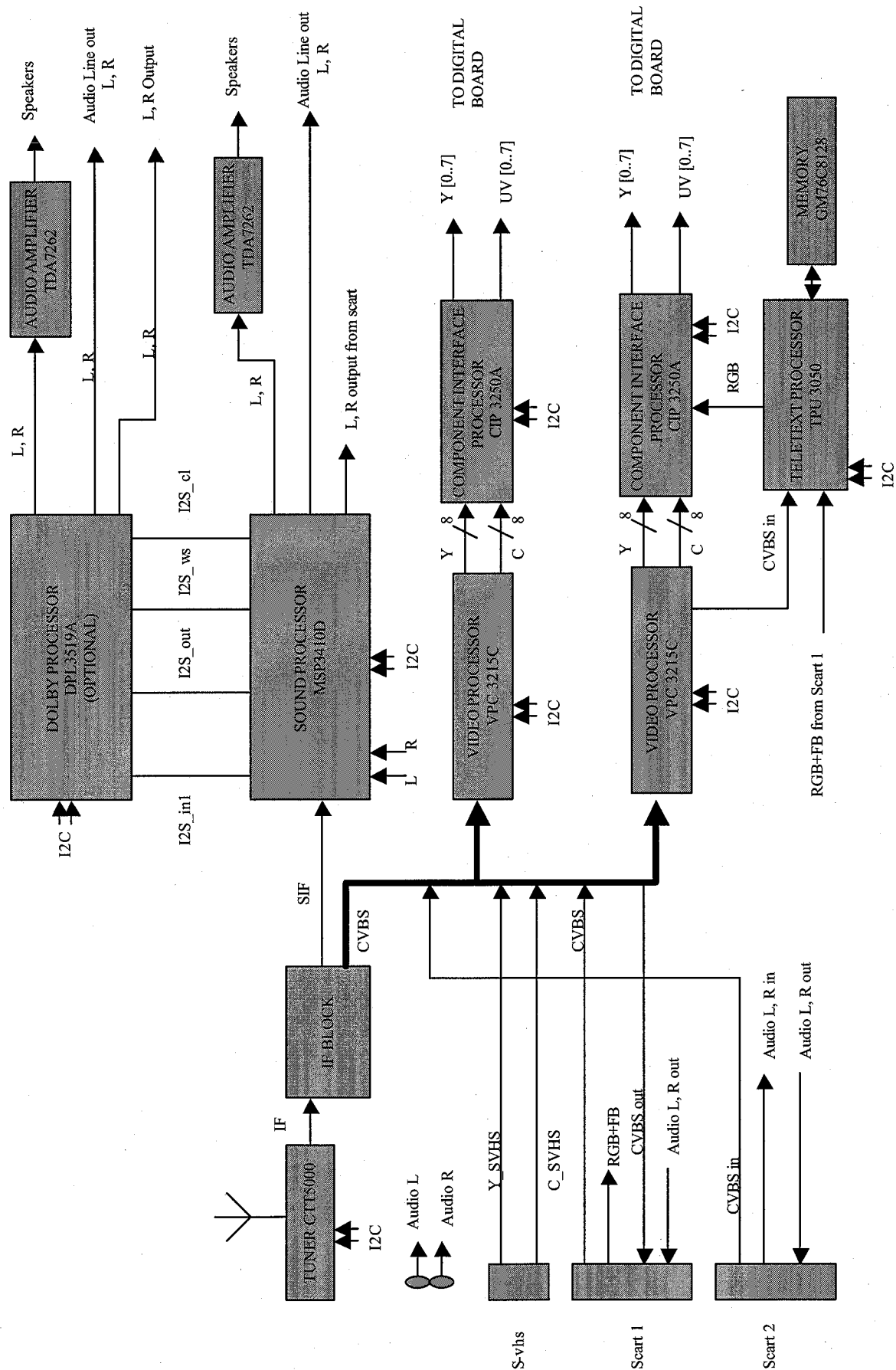
C. TEST CONDITIONS

- 1. Ambient Temperature : 15 - 35 °C
- 2. Relative Humidity : 45 - 75 % RH
- 3. Air Pressure : 0.86 - 1.06 Bar
- 4. Rated Voltage : 220 V_{AC} / 50 Hz
- 5. Test Signal : PHILIPS 5534 / 5518
- 6. Measuring Method : Based on IEC 107

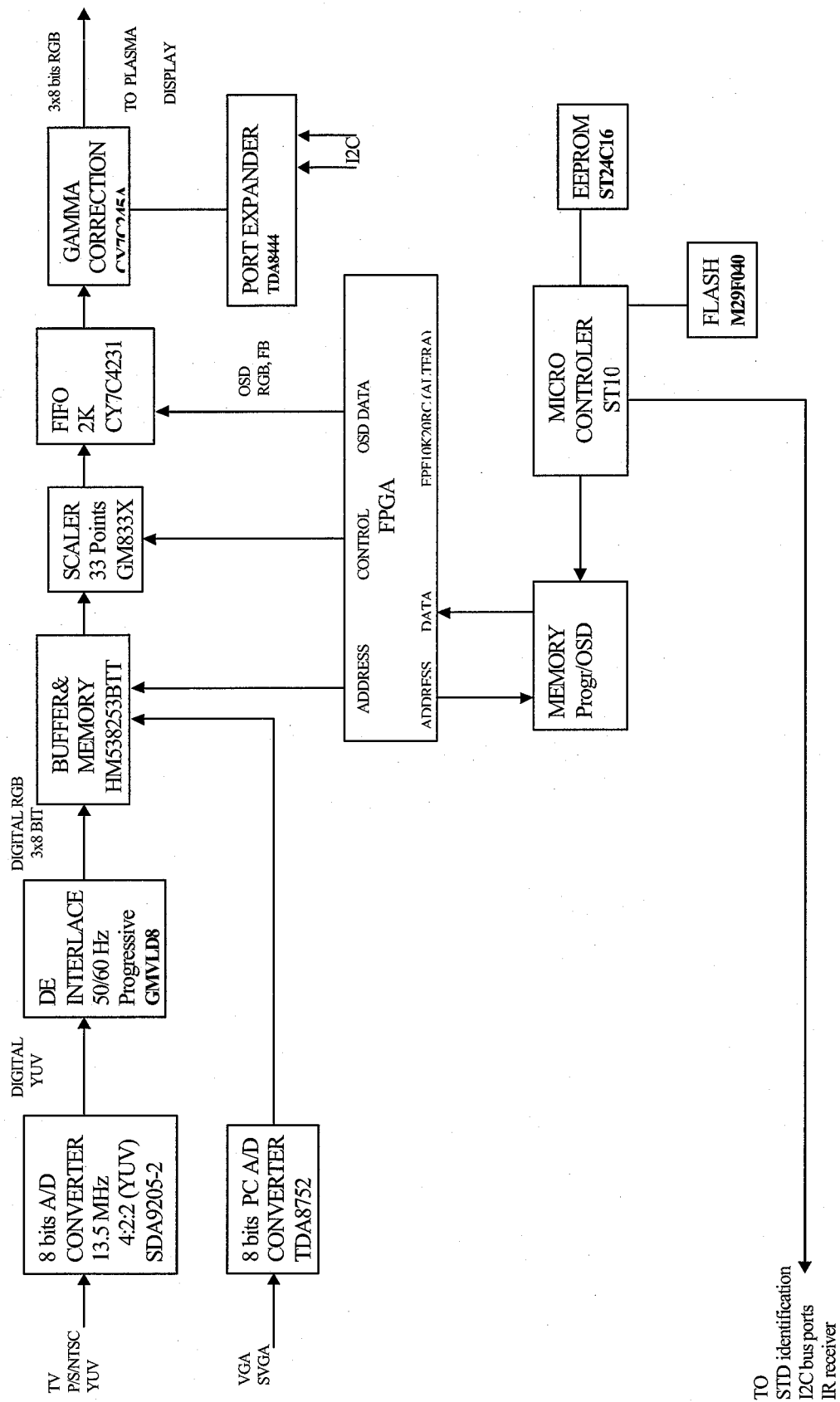
11AN42-ANALOG BOARD

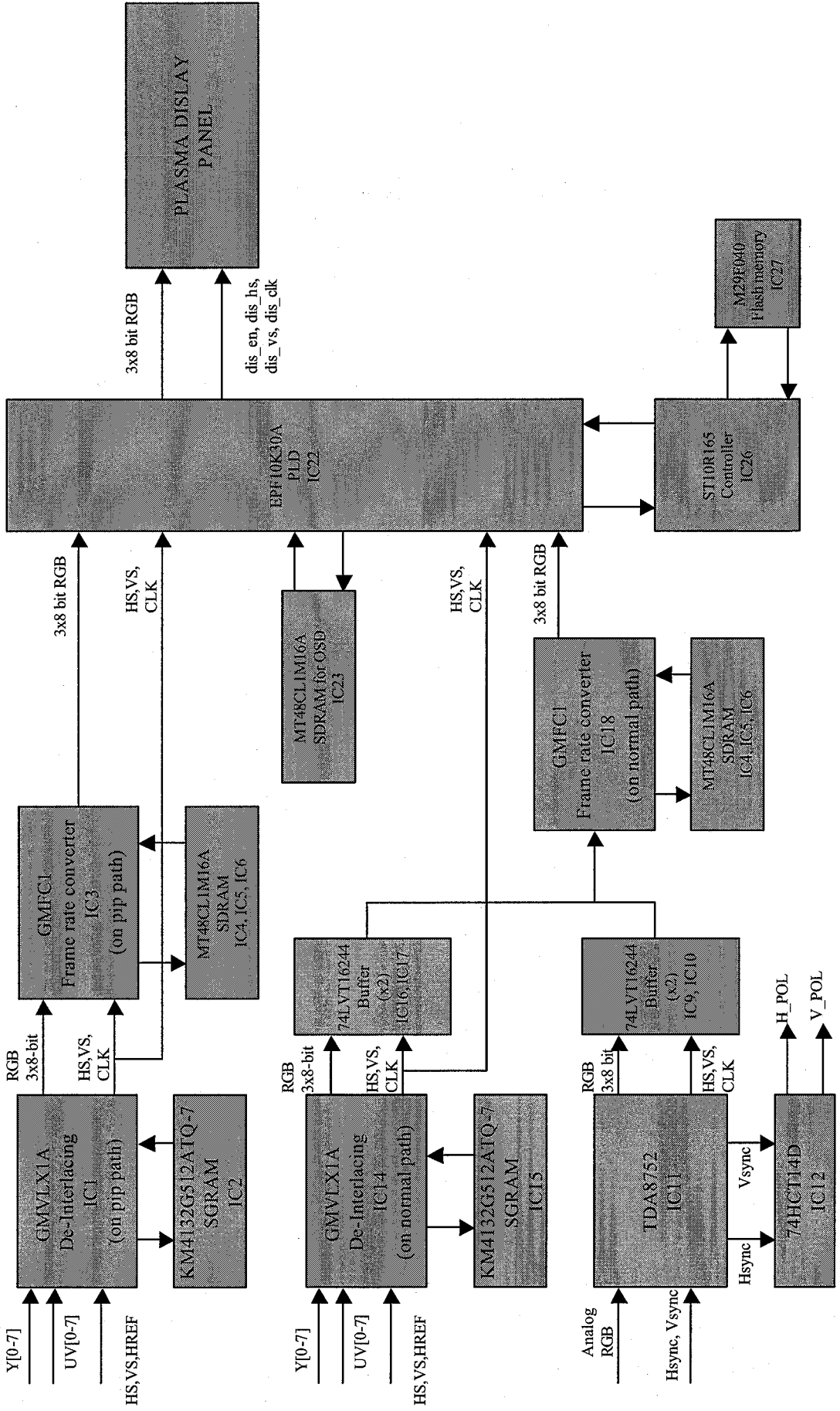


11AN42Y ANALOG PART



PLASMA DISPLAY TV-DIGITAL BOARD





PLASMA TV SERVICE MANUAL

We can separate plasma tv into parts of

- Power boards: 11PWA42 and 11PWB42.
- IR board: 11IR42
- Analog board: 11AN42
- Digital board: 11DG42
- Fan board: 11FAN42
- Plasma display panel
- Glass Filter
- Mechanical parts: Chasis cover, back cover, front panel, IR box, and speaker boxes

PLASMA TV BOARDS:

We have two power boards: 11PWA42 and 11PWB42. These two power boards are used to supply Analog board (11AN42), Digital Board (11DG42), and Plasma display panel.

11PWA42 POWER BOARD:

The main voltages produced on this board are +12V dc, +5V dc, and +5V_EC dc. +5V_EC is used to feed the logic part of the plasma display panel. The other +5V and +12V are used to feed the ICs on analog board, digital board and also used on the other power board. Fan board is also fed with +12V.

TDA4605 (IC5 on board) control IC is used to control MOS transistor (STW7NA100) for switch mode power supply.

11PWB42 POWER BOARD:

The main voltages of this board are +180V, +60V, and +30V. 180V and 60V are used for plasma display panel.

Plasma Display Panel needs three voltages: 180V (Vs) for panel driver circuit, 60V (Va) for address driver circuit, and 5V (Vcc) for logic circuit. Vs and Va voltages are adjusted according to the feedbacks from plasma display panel. Adjustment of these voltages are presented in **Adjustments Section**.

+30V is used for audio amplifier, TDA7262, which is IC1 on 11PWA42 board.

Two control circuit is used on 11PWB42 power board, which are SG3526 (IC1) and TDA4605 (IC2). SG3526 is used for 180V, and TDA4605 is for 60V and 30V.

11FAN42 FAN BOARD:

Plasma Display Panel TV uses two fans for cooling. Fans operate with +12V and it is fed by 11PWA42 board. If fans do not work, TV will be in thermal shut down mode.

11IR42 IR BOARD:

IR board has IR (Infrared Receiver) receiver (IR1) to receive the comments from remote controller. Plasma Display Panel TV uses one main controller ST10R165 (IC26 on 11DG42 board), and one auxiliary controller which is ST63T87 (IC1 on 11IR42 board, OTP type). This auxiliary controller is used for decoding and transmitting IR comments to the main controller.

The auxiliary controller ST6 (IC1) is also responsible from ON/OFF and stand-by mode. There is a red led on IR board. The led is off when TV is OFF, led is on when stand-by. The led is on while IR receiver receives signal from remote controller.

11AN42 ANALOG BOARD:

Analog board has five inputs: Tuner

Scart 1

Scart 2

S-Vhs

PC

Transmission is captured by Tuner CTT5000 (TUN1), which is an I²C controlled FST tuner. According to the selected system by software, IF module, IF1 (IF3352) configures its SAW filters and IF processing is carried out. Output of the IF processing is sound IF and video out (CVBS).

Sound signal is fed into MSP3410D (IC5) for sound processing. Video signal is fed into video switch TEA6417 (IC4) for switching with other video inputs.

We have also sound and video signals inputs from scart 1, scart 2 and s-vhs inputs. Sound signal (scart left, scart right) from scart and sound signal (left and right) from s-vhs inputs are also fed into MSP3410D (IC5) for sound processing. Video inputs from scart and s-vhs are input to Video switch TEA6417 (IC4) as video signal coming from IF module. Video switch, which is I²C controlled, is used to select one of the inputs according to the software.

According to the transmission system, if it is NTSC/PAL, video signal output from Video Switch is input to Comb Filter, MC141627 (FIC2). Comb Filter (FIC2) separates the luminance Y and chrominance C signal from NTSC/PAL composite signal by using digital signal processing techniques which minimize dot-crawl and cross-color.

When teletext mode is selected, video signal from video switch is input to teletext processor TPU3050 (IC7), which is I²C controlled. The output from text processor (IC2) R (Red), G (Green), B (Blue) and FB (Fast blank) are input to Video decoder TDA9141 (DIC3).

RGB, FB from text processor and Luminance Y, Chrominance C from Comb filter are input to Video decoder TDA9141 (DIC3).

Video decoder TDA9141 (DIC3) is an I²C controlled, alignment-free PAL/NTSC/SECAM color decoder/sync processor which has been designed for use with baseband chrominance delay line TDA4665 (DIC1). Output of Video decoder, Y,U,V signals (Pins: 12, 13, 14) are input to digital board 11DG42 via connector J2.

There is one more input, PC input. From socket PR1, PC RGB signals and synchronization signals are input to 11AN42 Analog board. RGB signals are transferred directly to digital board via J2. Synchronization signals are input to Inverter 74HCT14D (IC3). Horizontal sync, Horizontal polarity, Vertical sync, Vertical polarity signals are obtained by IC3 and transferred to Digital Board via connector J2.

11DG42 DIGITAL BOARD:

Analog YUV signal from antenna, scart, or s-vhs inputs and analog RGB PC signals are input to digital board. Since plasma display panel runs with proper digital data, this 11DG42 Digital board is used as an interface for DSP (Digital Signal Processing). Digital board is controlled by the main controller ST10R165, IC26 and an FPGA EPF10K20R, IC30.

The main controller, ST10, is a romless controller. Therefore, it uses an external Flash RAM for memory. The software of the TV is loaded into this flash RAM, M29F040.

Two analog to digital converters, one for TV P/S/NTSC YUV (SDA9205, IC1) and one for PC RGB (TDA8752, IC7), is used for conversion to digital signals.

Digital YUV signal is fed into De Interlace IC (GMVLD8, IC15) and output is taken in 3x8 bit RGB signal and fed into frame memories (HM538253BTT, on memory board) via buffers. Digital RGB signals from PC ADC are also fed into frame memories via buffers according to the selected mode, you are in TV mode or PC mode.

Output signals from frame memories are fed into Scaler IC, GM833, IC31. The function of the Scaler is to adjust the pixel rate of the input system to the plasma's pixel rate, which is 852x480 according to the warning from FPGA. It makes an evaluation inside and makes adjustment on RGB and/or their distribution. 3x8 bit RGB from Scaler is fed to Gamma Correction Unit through FIFO (2K).

Before being displayed, linear RGB data must be processed (gamma corrected) to compensate for the gamma of the display. Gamma correction ICs, one for each RGB, CY7C245, IC36, IC37, IC41 are used for gamma correction.

Output from Gamma correction ICs are fed into the display to display the picture frames.

ADJUSTMENTS

Plasma Display TV has two important voltage adjustments and these adjustments are related with plasma display panel. Two voltages, Vs (Panel driver circuit voltage), and Va (Address driver circuit voltage). These voltages are produced by 11PWB42 power board. Vs and Va are adjusted according to the feedback voltages from plasma display panel. These feedback voltages are Vrr, Vrs, and Vra.

According to these feedback voltages, Va and Vs are adjusted via P1 and P2 potentiometers, respectively.

The following tables presents the settings of these voltage adjustments:

No.	Item	Symbol	Term/Cond'n	Value			Unit
				Min	Typ.	Max	
1	Panel Drive r Circuit Voltage						
	Voltage	Vs	$165+10 \times Vrs$	165	-	185	V
	Ripple/Noise	Vnrs		-	-	500	mV
	Stability	-		-	-	+/- 1.5	%
	Setting accuracy	-		-	-	+/- 0,5	%
	Current (average)	Is	APC function operation	-	-	1.5	A
	Current (instant)	Isp		-	-	12	A
2	Address Driver Circuit Voltage						
	Voltage	Va	$55+10 \times Vra$	55	-	65	V
	Ripple/Noise	Vnrs		-	-	500	mV
	Stability	-				+/- 1.5	%
	Setting accuracy	-				+/- 0,5	%
	Current (average)	Ia		-	-	1.8	A
	Current (instant)	Iap		-	-	3.0	A
3	Logic Circuit Voltage						
	Voltage	Vcc	Fixed	4,75	5,0	5,25	V
	Ripple/Noise	Vnrs		-	-	200	mVp-p
	Current (average)	Icc		-	-	5.0	A
	Current (instant)	Icp		-	-	5.0	A

- PDP unit will not operate under the following conditions. When in this condition, panel driver circuit current "Is" will be less than 50mA.
 - "Vcc" has not been applied to the PDP unit.
 - 2 second period from power on until all power supply voltages (Vs, Va, and Vcc) have settled to normal operating levels.
 - "Vs" is outside of the standart range.
 - "Va" is outside of the standart range.
 - No vertical synchronous signal present at signal interface.
- Reference voltage Vrs is the output from the PDP unit for "Vs" voltage setting.
- Is current is automatically controlled to approximately 1.0A by the APC (Automatic Power Control) function. However, at start-up (1 minute or less), it can reach up to 4.0 A and then it goes down gradually to the convergent value for about 3 minutes. The APC setting value on start-up is approximately 300W (APC start-up display load ratio is approximately 20%).

4. Reference voltage Vra is the output from the PDP unit for “Va” voltage setting.
5. Vrr is the sequence control voltage to Vs and Va. When Vrr is “Enable level”, Vs and Va voltages are able to be input to the PDP unit. However, when Vrr is “Disable level”, Vs and Va voltage should be deactivated.

No.	Item	Symbol	Cond'n	Value			Unit
				Min.	Typ.	Max.	
1	Vs setting voltage						
	Voltage (variable)	Vrs		0.0	-	2.0	V
	Ripple/Noise	Vnrr		-	-	+/-500	mV
	Stability (average)	-		-	-	+/- 0.2	%
	Current	Irs		-	-	3	mA
2	Va setting voltage						
	Voltage (Variable)	Vra		0.0	-	2.0	V
	Ripple/Noise	Vnrr		-	-	+/-500	mV
	Stability (average)	-		-	-	+/- 0.2	%
	Current	Ira		-	-	3	mA
3	Sequence control high voltage to Vs and Va						
	Voltage (Fixed)	Vrr	Enable level	2.0	-	3.5	V
			Disable level	0.0	-	1	V
	Ripple/Noise	Vnrr		-	-	+/-500	mV
	Stability (average)	-		-	-	+/- 0.2	%
	Current	Irr		-	-	3	mA

1. Vrs is set at a value obtained from the following formula which is relative to Vs.

$$V_s = 165 + 10 \times V_{rs}$$
[Vrs: 0 to 2.0V]
2. Vra is set at a value obtained from the following formula which is relative to Va.

$$V_a = 55 + 10 \times V_{ra}$$
[Vra: 0 to 2.0V]
3. When the PDP-unit is powered on, Vrr is output at a value of about 0V. Then if Vs and Va are able to be input to the PDP-unit from 11PWB42 board, Vrr is output at a value of about 3.0V.
4. Load resistor for each output signal are set at a value of 1kohm.

Arrivée
Alim 180

Vers Ecran
Plasma

Vers carte TV

Entrée
DROITE

Entrée
GAUCHE

Entrée
Secteur

Vers carte
uP IR

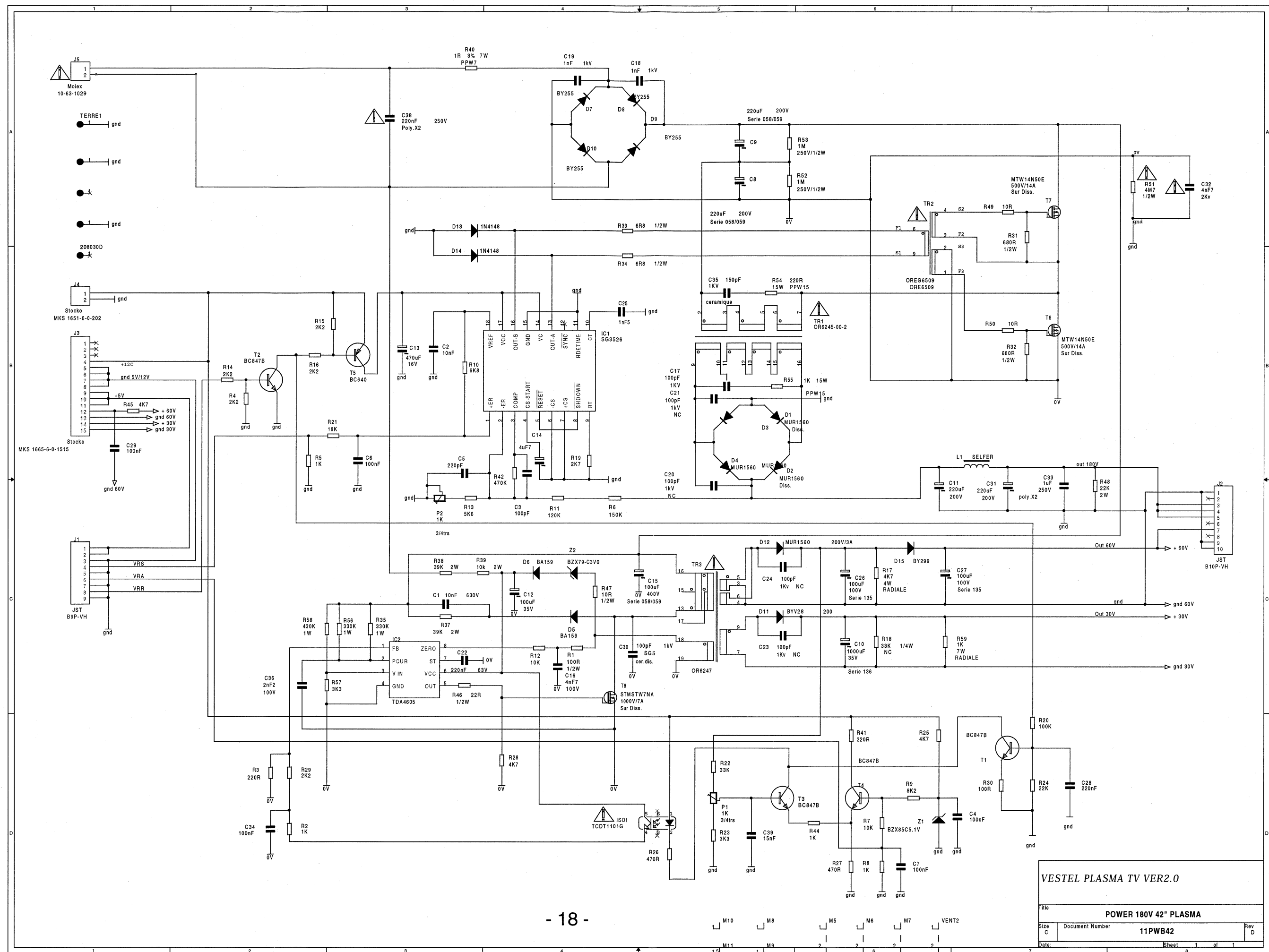
HP-DROIT

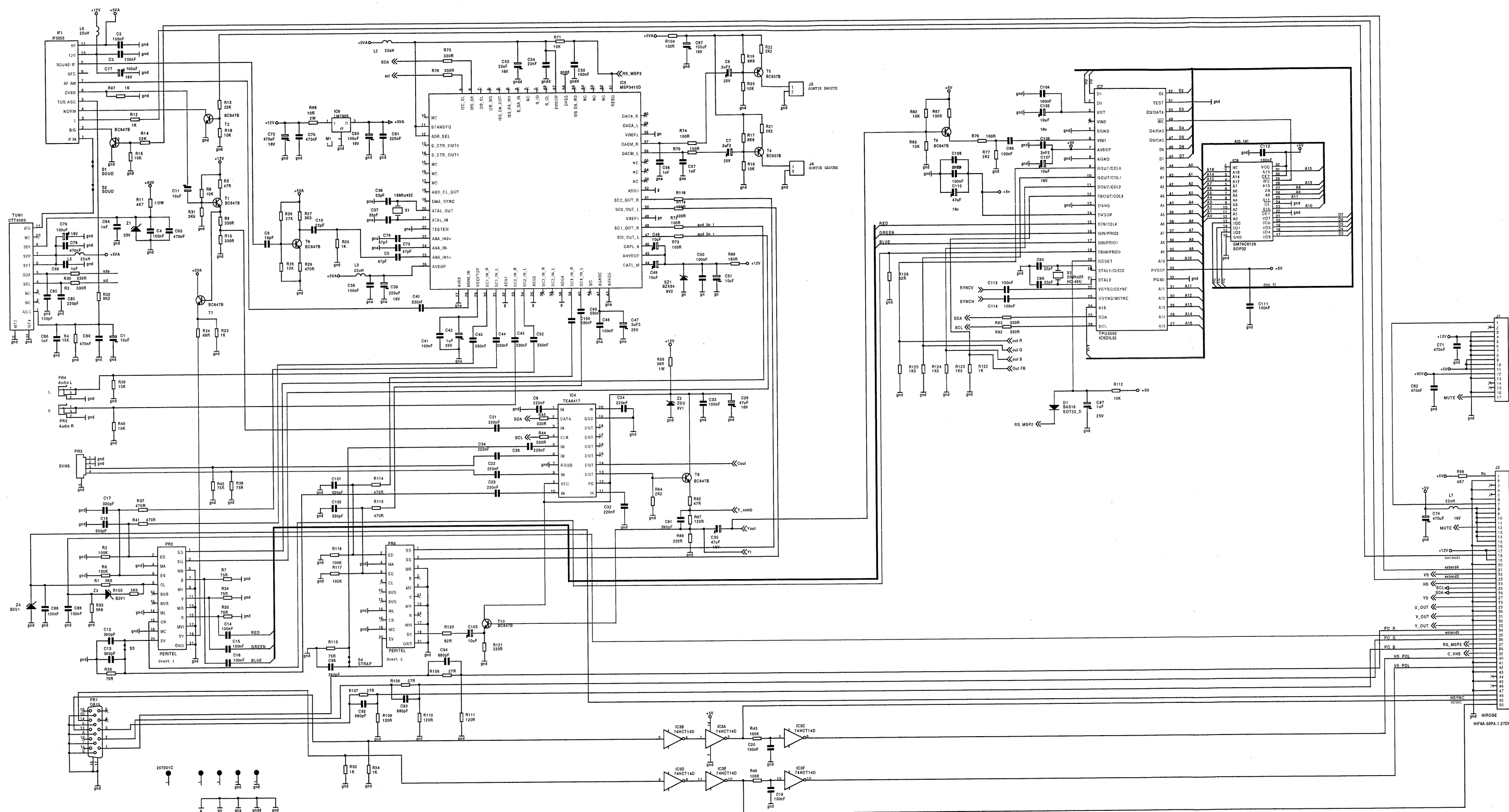
HP-GAUCHE

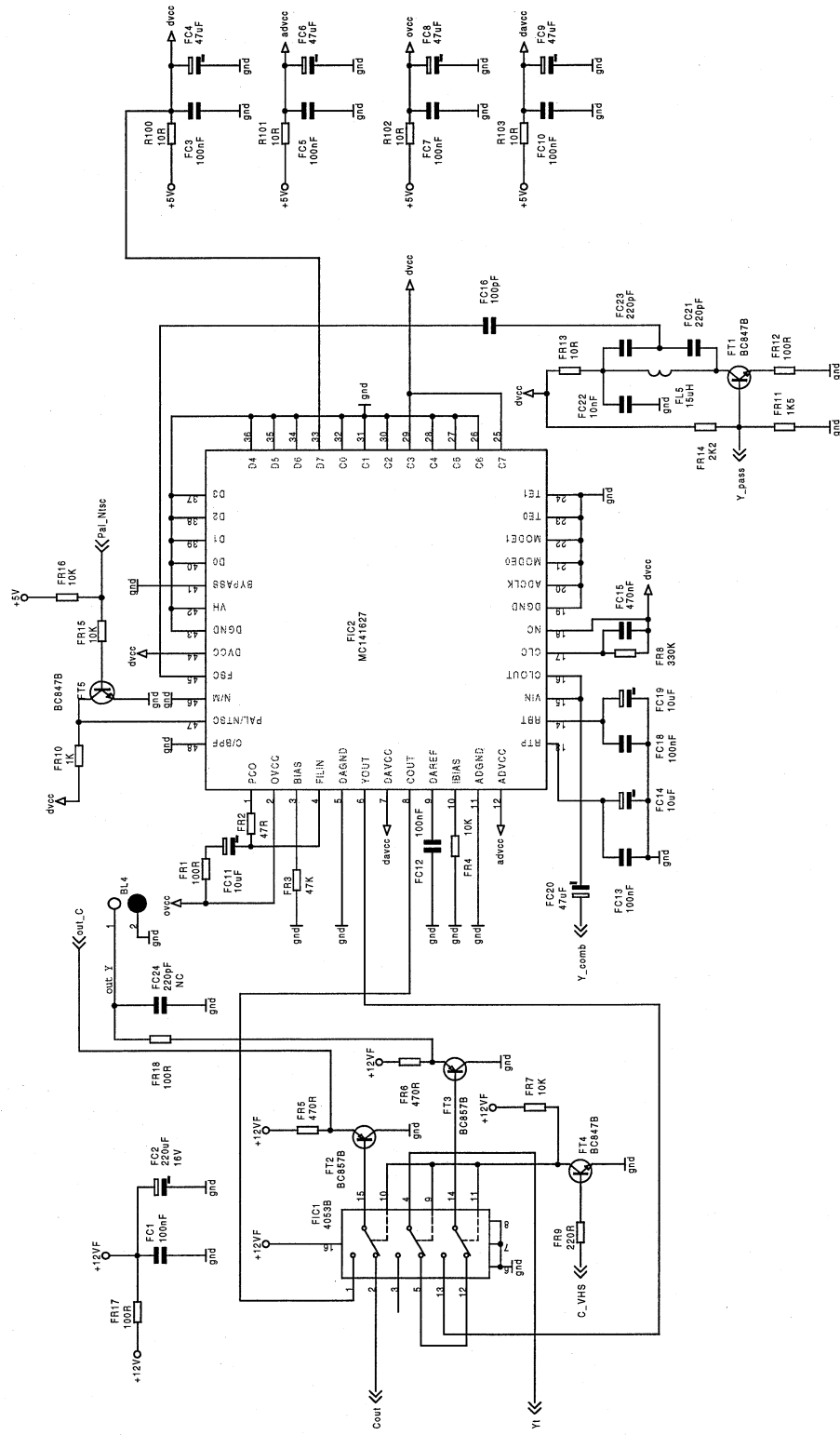
Vers Alim
180

VESTEL PLASMA TV VER 2.0

Title			Audio 2x15W + Standby + 5/8/12 Plasma
Size	Document Number	11PWA42	
Date:	Sheet	f	of f

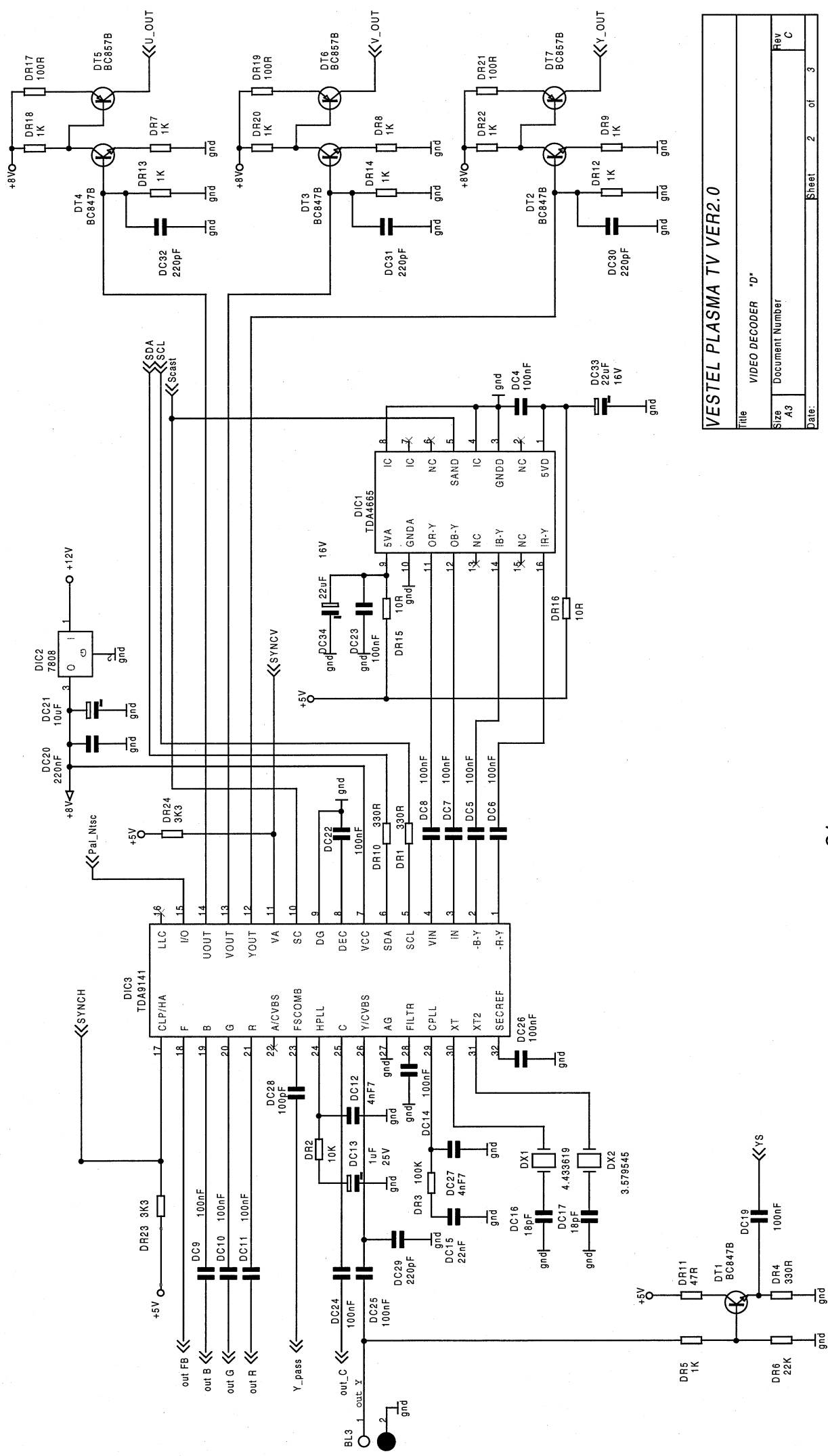






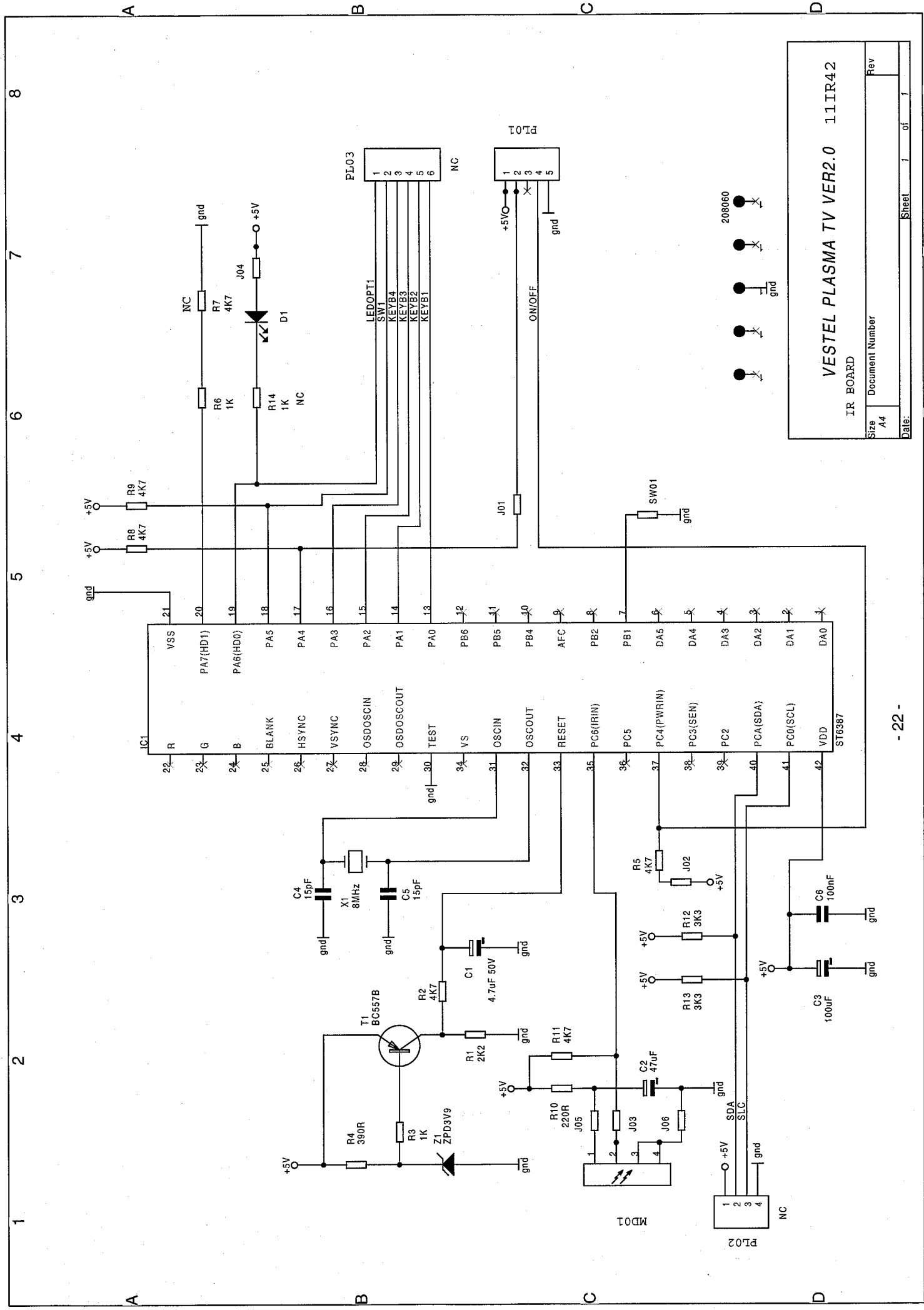
VESTEL PLASMA TV VER2.0

File	COMB FILTER -F-
Size	Document Number
Rev	C
Date	Sheet 3 of 3



VESTEL PLASMA TV VER2.0

Title VIDEO DECODER "D"		
Size A3	Document Number	Rev C
Date:		Sheet 2 of 3



VESTEL PLASMA TV VER2.0 11IR42

IR BOARD

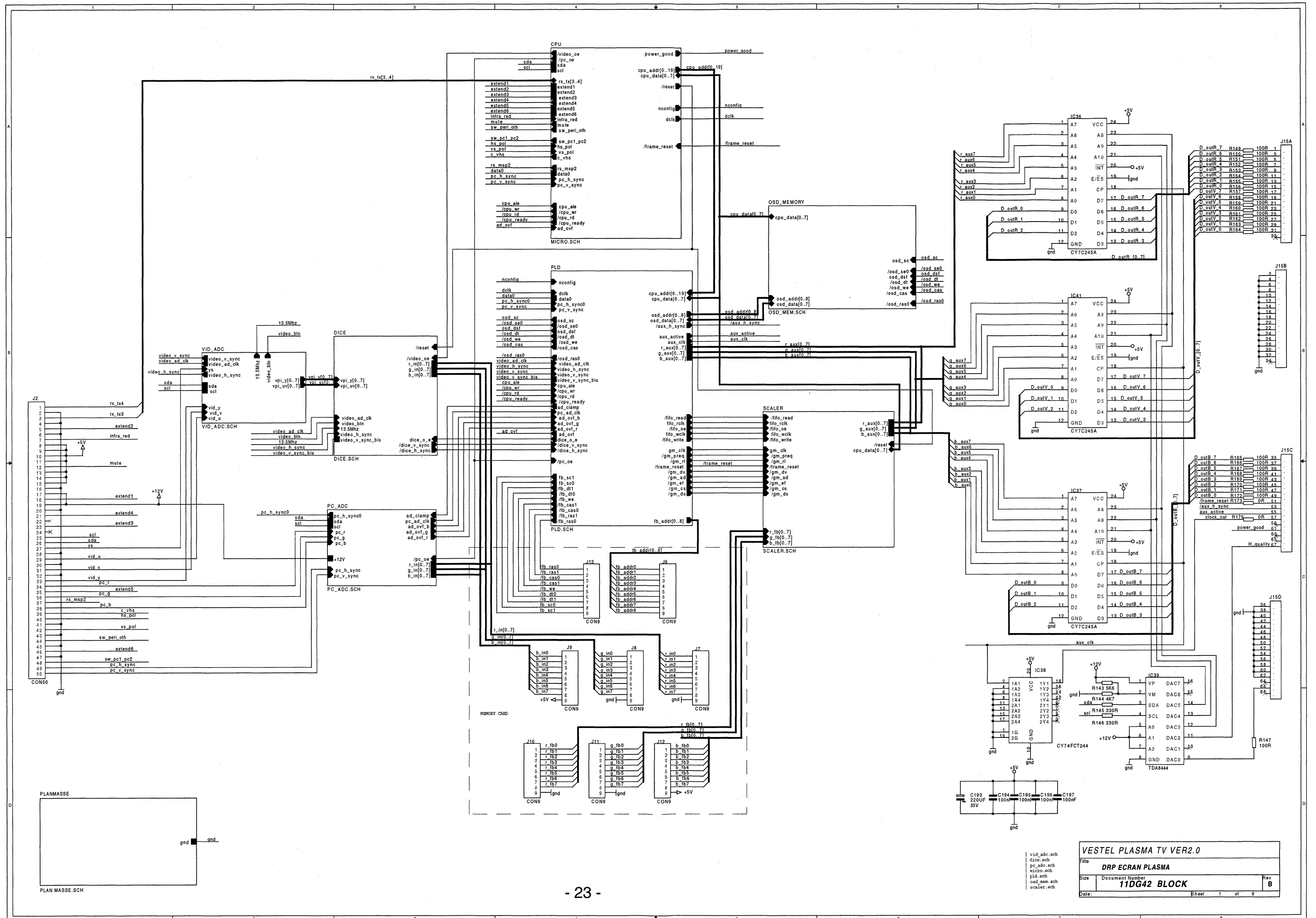
Size A4

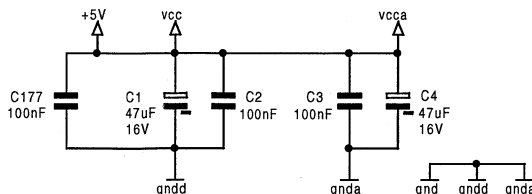
Document Number

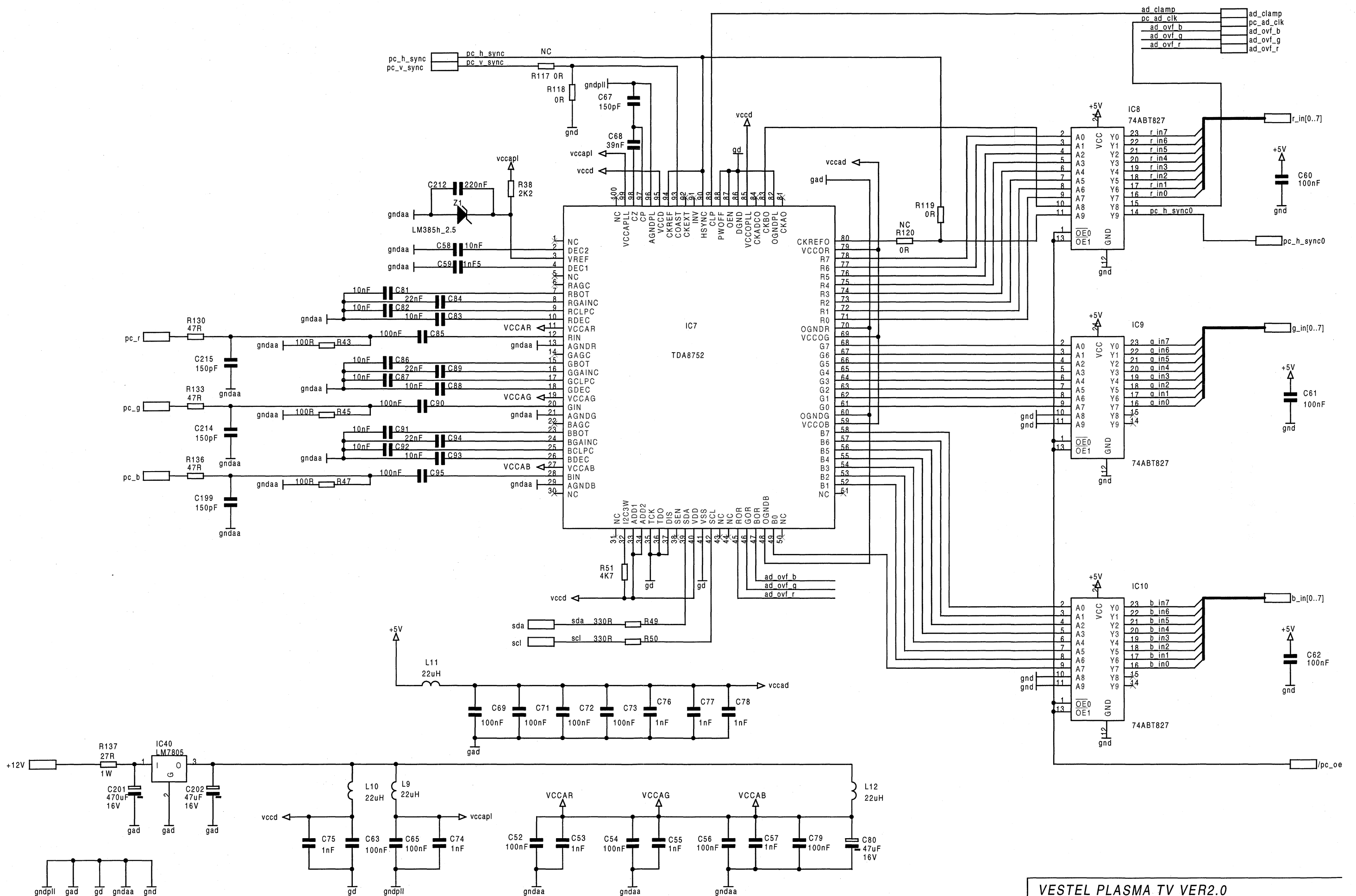
Rev

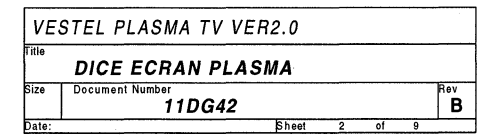
Date:

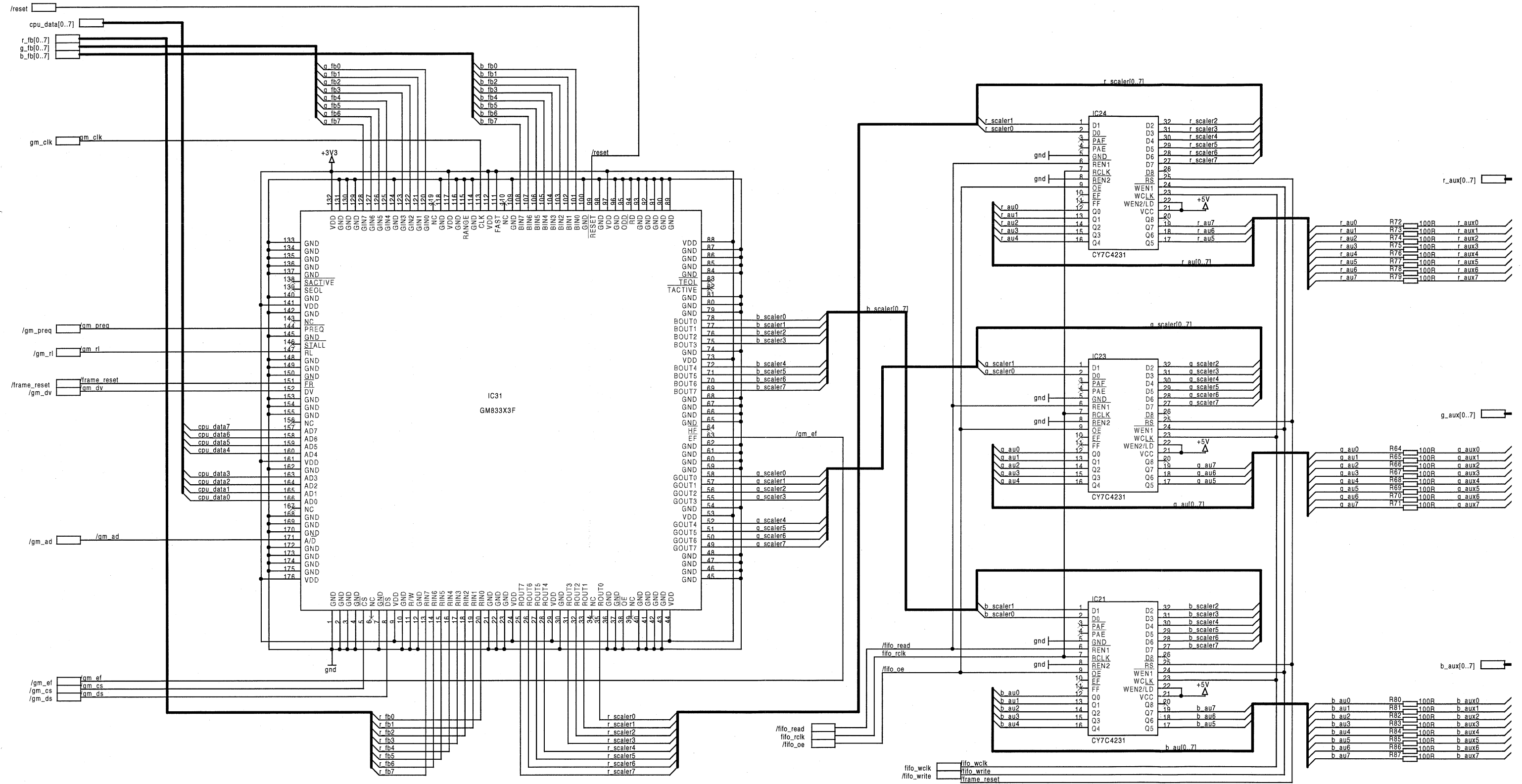
Sheet 1 of 1

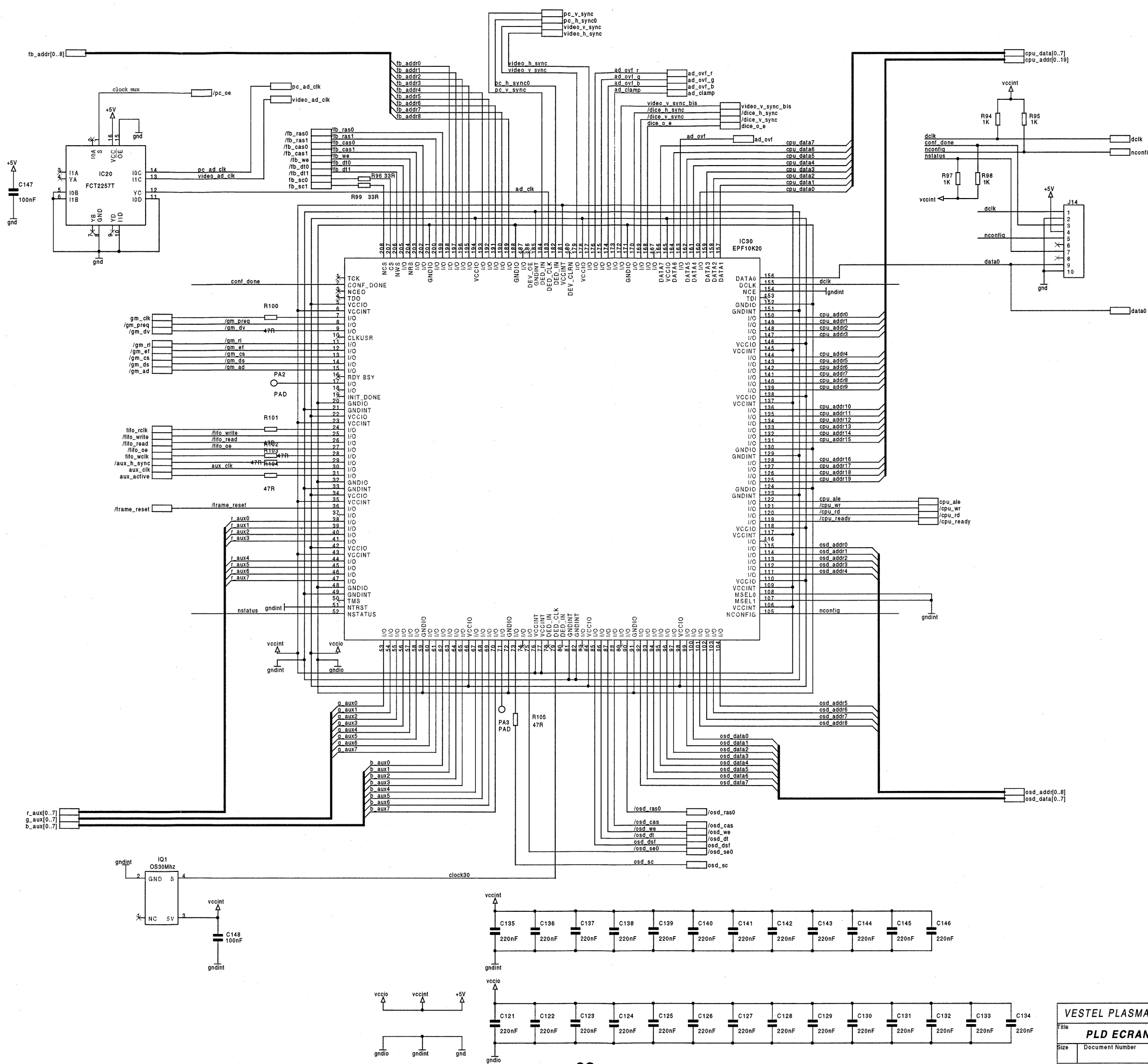


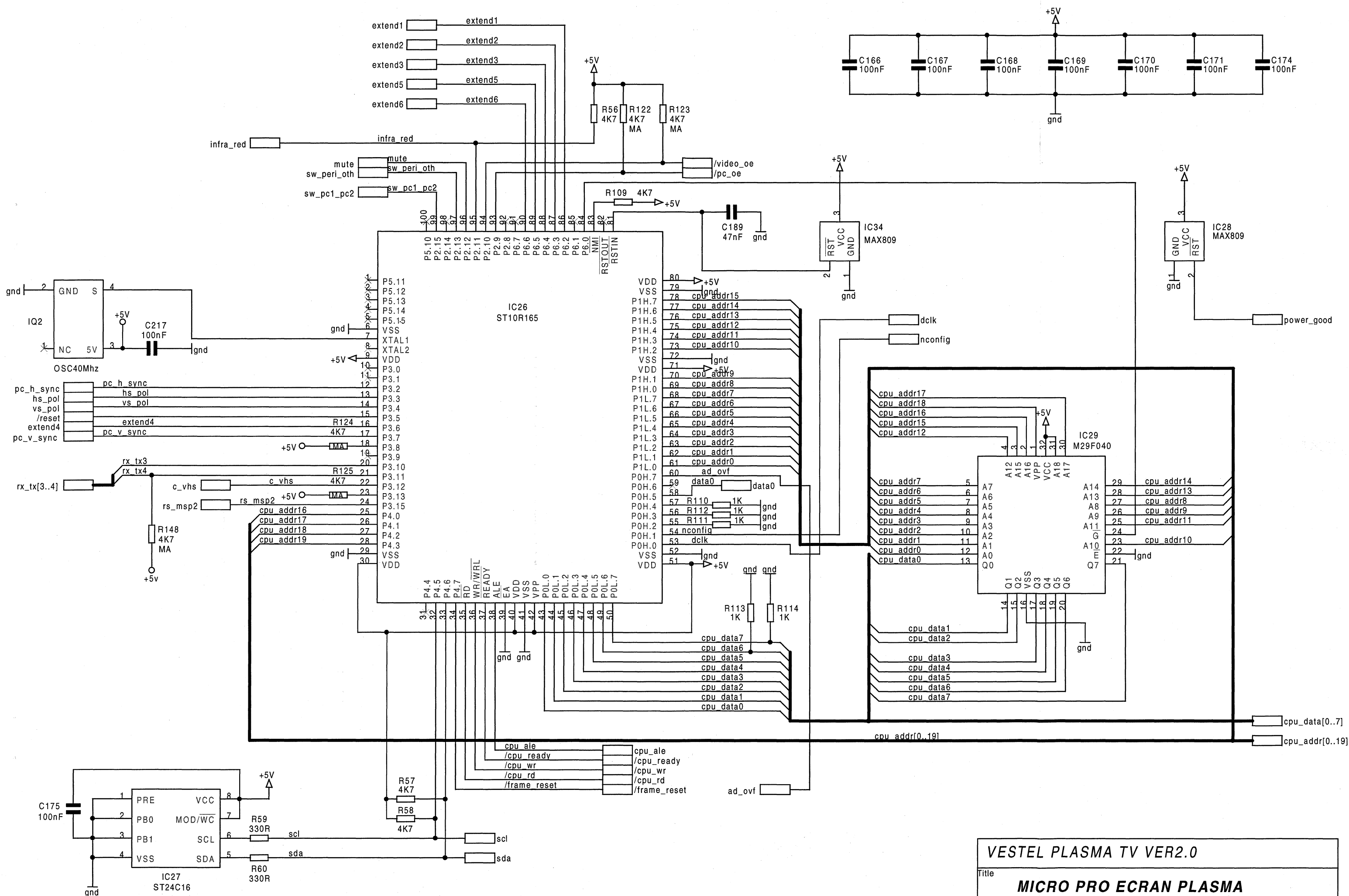


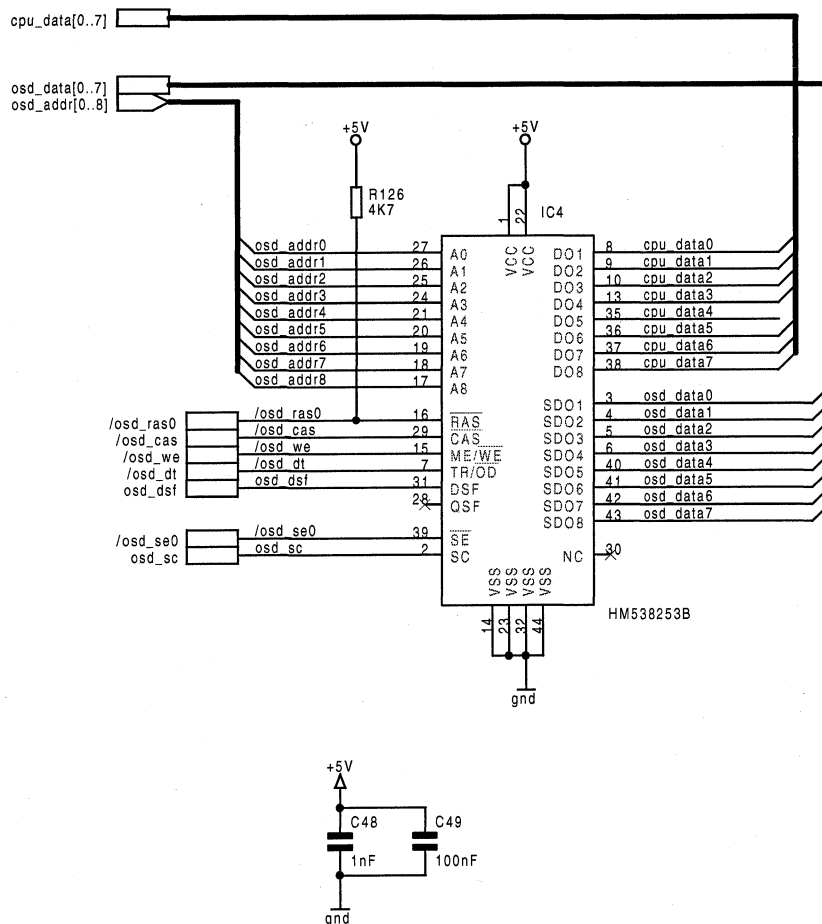












VESTEL PLASMA TV VER2.0

Title

OSD MEMORY ECRAN PLASMA

Size

Document Number

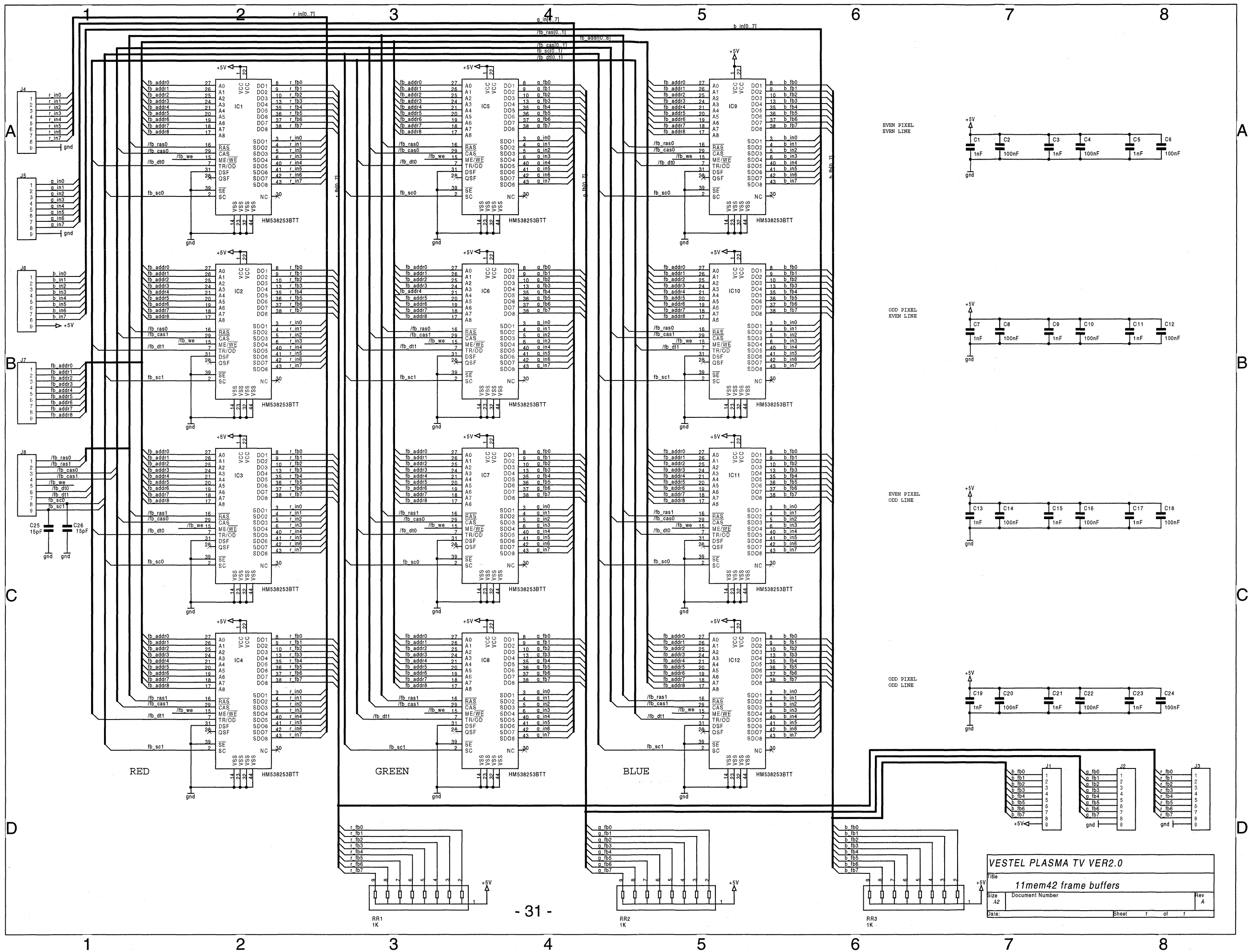
11DG42

Rev

B

Date:

Sheet 4 of 9



DIAGNOSTIC FAULT FINDING FOR PLASMA TV

First, if we take into consideration that Plasma TV can be divided into the parts below, we can easily examine any faults regarding the Plasma TV.

Boards In The Main Cabinet

- 1- Power B. Assy. 11PWA42 5/12V
- 2- Power B. Assy 11PWB42 180/60/30V
- 3- Analog B.Assy 11AN42
- 4- Digital B.Assy 11DG42
- 5- Memory B.Assy 11MEM42
- 6- Infrared B.Assy 11IR42
- 7- Cooler B.Assy.11FAN42

Mechanical Parts & Assembling Cables & Materials For final assembly

1- In Main cabinet

Mechanical Parts In Main Cabinet

- 1.Front Cover Plasma
- 2.Back Cover Plasma
- 3.Chassis Cover Plasma
- 4.Controller Cover Plasma
- 5.Foot Mounting Bracket R (for right side)
- 6.Foot Mounting Bracket L (for left side)

Assembling Cables In Main Cabinet

1. Conn.Assy.50P 25CM Analog- Digital (Between 11DG42 and 11AN42)
- 2.Conn Assy.2*34 P 30CM DIG- ECRAN (from 11DG42 to Plasma Display)
- 3.Conn.Assy.3P 550MM for Filter (from power line filter to switch On-Off)
- 4.Conn Assy.5P 96CM IR (from 11IR to 11PWA42 5/12V)
- 5.Conn. Assy.55cm 5/12V (from switch On-Off to 11PWA42)
- 6.Conn. Assy. 9P/16P 180V-E-A (between 11PWA42 5/12V &11PWB42 180V &Plasma Display)
- 7.Conn Assy. 10P 20CM 180V-ECRAN (from 11PWB42 to Plasma Display)
- 8.Conn Assy. 15P 60CM 180V-5/12V (between 11PWA42 &11PWB42)
- 9.Conn.Assy. 2P 20CM power 180-5/12V (between 11PWA42&11PWB42)
- 10.Conn Assy.17P 100CM 5/12V-Analog (between 11PWA42 & 11AN42)
- 11.Conn.Assy.2P 60CM Coax.A.Green (from 11AN42 to 11PWA42)
- 12.Conn.Assy.2P 60CM Coax.A.Red (from 11AN42 to 11PWA42)
- 13.Conn.Assy.2P 70CM Speaker (from 11PWA42 to Jack Speaker 4P)

Assembling Materials(In main Cabinet)

- 1.Ferrite for Plasma T1(to prevent EMI)
- 2.Ferrite for Plasma T2 (to prevent EMI)
- 3.Filter Powerline 3A FN321(to filter parasite on main volltage)
- 4.Switch On-Off 4A/120A(to switch on and off the TV)

2- In Speaker boxes

Mechanical Parts In Speaker Boxes

- 1.Back Cvr.Speaker (R)
- 2.Back Cvr Speaker (L)
- 3.Front Speaker
- 4.Speaker grill
- 5.Foot Mounting Bracket & Speaker Hangers

Other materials In Speaker Boxes

- 1.Speaker 4R 50W
 - 2.Tweeter 4R 15W
 - 3.Cap El 6.8UF 50V M (BPL)
 - 4.Sponge & Isolation Cottons
- Plasma Display Panel (the most important part of the TV)
 - Glass Filter (for shielding X-rays generated by the TV)

Looking At The General Concept Of The Plasma Tv

You can get some general information from the Service Manual of Plasma TV. Looking at block diagrams of the Boards will give you basic understanding of TV concept.

The Faults Which May Be Encountered

1- No Sound, No Picture On Tv

First, you should check that when you pressed power button (switch On-Off) does red led (center bottom of the TV) light up? It means that TV is in stand-by mode.

A- If red led does not light up,

1. Check the main voltage from wall outlet to filter powerline through the power cable

2. Check the main voltage from filter powerline to switch on-off through the Conn assy 3P 550mm for Filter.

3. If main voltage exists in previous two steps, then check the fuse 4A 250V (position: F2-F3) on 11PWA42 5/12V.

4. If fuse is not ok, do not change immediately and do not try to test because some other components may be burned. Before testing the TV again, you should check the components below:

- On 11PWA42 5/12V: Position D1, D2, D3, D4, D6, D7, D8, D9, D10, D12, D13, T7
- After checking these components, in order to check only 11PWA42, remove the cable between J7 (On 11PWA42) and J5 (On 11PWB42) and inspect the voltage outputs (5V-5VEC-12V) of 11PWA42.
- Then, check the components stated below on the 11PWB42 180V.
On 11PWB42 180V: D1, D2, D3, D4, T6, T7, T8.
- After these steps, you can test TV again. If the problem continues, check the cables between 11PWA42, 11PWB42, 11IR42 and Switch On-Off.

B- TV is in stand-by mode. When you press digit keys on remote controller to switch on TV, red led lights off but TV screen does not light up.

- Check the voltage outputs for 11PWA42 5/12V and 11PWB42 180V boards.
- Check the cable (that has 17 pins) between 11PWA42 and 11AN42.
- Check the cable (that has 50 pins) between 11AN42 and 11DG42.
- Check the cable (that has 2 pins) between J7 (On 11PWA42) and J5 (On 11PWB42)

2-The Picture Is Ok, But There Is No Sound

- First, check the cables from jack speaker 4 pin (right side of the chassis cover) to the Speaker Boxes.
- Check the cables from J4 and J5 on the 11AN42 to J6 and J8 on the 11PWA42 5/12V.
- Check the cables from J1 and J3 on the 11PWA42 5/12V to Jack speaker 4 pin (right side of the chassis cover)
- Check IC TDA7262 (position: IC1) and around this IC on the 11PWA42.

- Check IC MSP3410D (position: IC5) and around this IC on the 11AN42.
- If only one channel sound is not present, you should apply these inspections above according to the channel that has the problem and before that you should check speaker boxes.

3- There Is No Problem With Sound, But No Picture On The Screen

- Check the cable (that has 68 pins) from 11DG42 to Plasma Display Panel.
- Check whether 5V cable is connected to 11DG42.
- Check the cable (that has 50 pins) between 11AN42 and 11DG42.

If you can not find origin of the problem,

- You should remove the shields from the 11DG42
- Make touch-up the 11DG42 boards
- First, check the IC36, IC37, IC41(Gamma corection ICs) on the 11DG42
- Second check IC31(scaler IC)
- Then check IC30 (PLD IC).

4- Functionality Of Boards Are Ok, But No Picture Appears On The Screen

If it is 100% sure that all the boards' functionality and all the cable connections are ok, it can be concluded that the problem is from plasma display panel.

Important Notes:

1. If Analog board 11AN42 is removed for whatever reason, it should be kept in mind that perfect grounding of tuner and analog board when re-assembling is a must for picture quality.
2. The connection between glass filter and the cabinet must be perfect. To achieve this perfectness, a special contact material is used. When tv is dis-assembled for whatever reason, be careful with this material while re-assembling, it is a must for emi and also picture quality.

The block diagram illustrates the architecture of a digital video processing system. It features two input paths: TV P/NTSC YUV and VGA SVGA. The TV input path includes an 8 bits A/D CONVERTER (13.5 MHz, 4:2:2 (YUV), SDA9205-2) and a DIGITAL YUV block. The VGA input path includes an 8 bits PC A/D CONVERTER (TDA8752). Both paths feed into a DE INTERLACE block (50/60 Hz, Progressive, GMVLD6). The output of the DE INTERLACE block goes to a BUFFER & MEMORY block (HM538253BTT), which also receives input from the VGA A/D converter. The output of the BUFFER & MEMORY block goes to a SCALER block (33 Points, GM833X). The output of the SCALER block goes to a FIFO 2K block (CY7C4231). The output of the FIFO 2K block goes to a GAMMA CORRECTION block (CY7C4245). The output of the GAMMA CORRECTION block goes to a PORT EXPANDER block (TDA8444). The PORT EXPANDER block also receives input from the SCALER block. The output of the PORT EXPANDER block goes to the output of the system. The system is controlled by an FPGA (EPF10K20RC (ALTERA)) which receives ADDRESS, CONTROL, and OSD DATA signals. The FPGA also outputs ADDRESS and DATA signals to a MEMORY block (Progr/OSD). The MEMORY block is connected to a MICRO CONTROLLER (ST10). The MICRO CONTROLLER is also connected to an EEPROM (ST24C16) and a FLASH (M29F040). The MICRO CONTROLLER outputs TO STD identification, I2C bus ports, and IR receiver signals.

AN42-ANALOG BOARD

SCART-1 AUDIO IN
SCART-2 AUDIO IN
S-VHS/PC AUDIO IN

PLL TUNER CT135000

IF STAGE IF 3353

VIDEO SWITCH TDA6417

COMB FILTER MC141627

VIDEO DECODER TDA914

TELETEXT PROCESSOR TPU3050

TELETEXT MEMORY GM76C51

SYNC SEPARATOR 74HCT14D

AUDIO OUTPUT AMPLIFIER TDA7262

EXTERNAL IN/OUT

SCART-1

SCART-2

S-VHS

SVHS/PC AUDIO IN L/R

PC INPUT

YUV analog

DELAY LINE TDA4665

Interfacing signals: I2C, IF, CVBS, SIF, L, R, C, L/C from svhs, RGB, FB, H_sync, V_sync, H_pol, V_pol.